1 tttaggtgac actatagaat actcaagctt gactaaatat ttagaaagca cattgtgttc 61 agtgaaactt tqtatataat qaatagaata ataaaaqatt atqttggatg actagtctgt 121 aattgcctca aggaaagcat acaatgaata agttattttg gtacttcctc aaaatagcca 181 acacaatagg gaaatggaga aaatgtactc tgaacaccat gaaaagggaa cctgaaaatc 241 taatgtgtaa acttggaqaa atgacattag aaaacgaaag ctacaaaaga gaacactctt 301 caaaataatc tgagatgcat gaaaggcaaa cattcactag agctggaatt tccctaagtc 361 tatgcaggga taagtagcat atttgacctt caccatgatt atcaagcact tctttggaac 421 tgtgttggtg ctgctggcct ctaccactat cttctctcta gatttgaaac tgattatctt 481 ccagcaaaga caagtgaatc aagaaagttt aaaactcttg aataagttgc aaaccttgtc 541 aattcagcag tgtctaccac acaggaaaaa ctttctgctt cctcagaagt ctttgagtcc 601 tragragtar caaaaaggar acartetggr catteterat gagatgette agragatett 661 cagcetette agggeaaata tttetetgga tggttgggag gaaaaceaca cggagaaatt 721 cctcattcaa cttcatcaac agctagaata cctagaagca ctcatgggac tggaagcaga **2781** qaaqctaaqt qqtactttqq qtaqtqataa ccttaqatta caagttaaaa tgtacttccg 4841 aaggatccat gattacctgg aaaaccagga ctacagcacc tgtgcctggg ccattgtcca [©]901 agtagaaatc agccgatgtc tgttctttgt gttcagtctc acagaaaaac tgagcaaaca ^{III}961 aggaagaccc ttgaacgaca tgaagcaaga gcttactaca gagtttagaa gcccgaggta 1021 ggtggaggga ctagaggact tctccagaca tgattcttca tagagtggta atacaattta 1081 tagtacaatc acattgcttt gattttgtgt atatatatat ttatctgtgt tttaagattg 1141 tgcatattga ccacaattgt ttttattttg taatgtggct ttatatattc tatccatttt _m1201 a

Figure 1

MIIKHFFGTVLVLLASTTIFSLDLKLIIFQQRQVNQESLKLLNKLQTLSIQQ**C**LPH RKNFLLPQKSLSPQQYQKGHTLAILHEMLQQIFSLFRA**NIS**LDGWEE**NHT**EK FLIQLHQQLEYLEALMGLEAEKLSGTLGSDNLRLQVKMYFRRIHDYLENQD YST<u>C</u>AWAIVQVEISRCLFFVFSLTEKLSKQGRPLNDMKQELTTEFRSPR

Figure 2

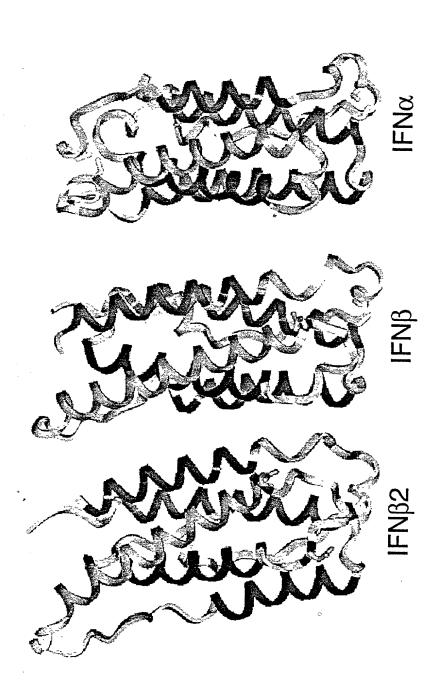


Figure 3

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(1) MIKHFFGTVLVLLASTTIFSIDLKTIIFQQRQVNQESTKTLNKTQ-TUSIQQCLPHRKNFLLPQKSLSP
     IFNB2
      IFNB
              (1) MTNKCLLQTALLLCFSTTALSMSYNLLGFLQRSSNFQCQKLLWQTNGRTEY--CLKDRMNFDIPEEIKQL
              (1) MALTFYLLVALVVLSYKSFSSIGCDLPOTHS-LGNRRALILLAQMR-RISPFSCLKDRHDFEFPQEEFDD
 IFNalpha8
 IFNalpha7
              (1) MARSFSLLMVVLSYKSICSLGCDLPOTHS-LRNRRALILLAQMG-RISPFSCLKDRHEFRFPEEEFDG
 IFNalpha6
              (1) MALPFALLMALVVLSCKSSCSLDCDLPQTHS-LGHRRTMMLLAQMR-RISLFSCLKDRHDFRFPQEEFDG
              (1) MALPFVLLMALWVLNCKSICSLGCDLPQTHS-LSNRRTLMIMAQMG-RISPFSCLKDRHDEGFPQEEFDG
 IFNalpha5
              (1) MALSFSLLMAVIVLSYKSICSLGCDLPQTHS-LGWRRATILLAQMG-RISHFSCLKDRHDFGFPEEFFDG
IFNalpha4b
IFNalpha21
              (1) MALSFSLLMAVLVLSYKSICSLGCDLPQTHS-LGNRRALILLAQMG-RISPFSCLKDRHDFGFPQEEFDG
              (1) MALTFALLVALLVLSCKSSCSVGCDLPQTHS-LGSRRTLMLLAQMR-RISLFSCLKDRHDFGFPQEEF-G
(1) MALSFSLLMAVLVLSYKSICSLGCDLPQTHS-LGNRRALILLAQMG-RISHFSCLKDRYDFGFPQEVEDG
 IFNalpha2
IFNalpha16
IFNalpha14
              (1) MALPFALMMALVVLSCKSSCSLGCNLSOTHS-LNNRRTLMLMAQMR-RISPFSCLKDRHDFEFPQEEFDG
IFNalpha13
              (1) MASPFALLMVLVVLSCKSSCSLGCDLPETHS-EDMRRTLMLLAOMS-RISPSSCLMDRHDFGFPQEEFDG
IFNalpha10
              (1) MALSFSLLMAVLVLSYKSICSLGCDLPOTHS-LGNRRALILLGOMG-RISPFSCLKDRHDFRIPQEEFDG
 IFNomega1
              (1) MALLFPLLAALVMTSYSPVGSLGCDLPONHG-LLSRNTLVLLHOMR-RISPFLCLKDRRDFRFPOEMVKG
              (1) MKYT-SYTLAFQLCIVLGSLGCYCODBYVKE----AENLKKYFNAG---H--SDVADNGTLF--LGILK
  IFNgamma
 Consensus
              (1) MAL F LLMALLVLS KS CSLGCDLPQTHS L NRR L LLAQM RISPFSCLKDRHDF FPQEEFDG
     IFNB2
                 QQYQKGHTLATLHEMLQQIFSLFRANISLDGWEENHTEKFLIQLHQQLEYLEALMGLEAEKLSGTLGSDN
                 QQFQKEDAALTIYEMLONIFATFRQDSSSTGWNETIVENLLANWYHQTNHLKTVLEEKLEKEDFTRGKLM
      IFNB
 IFNalpha8
             (69) KQFQKAQAISVLHEMIQQTFNLFSTKDSSAALDETLLDEFYIELDQQLNDLESCVMQEVGVIESPLMYED
 IFNalpha7
             (69) HQFQKTQAISVLHEMIQQTFNLFSTEDSSAAWEQSLLEKESTELYQQLNDLEACVIQEVGVEETPLMNED
 IFNalpha6
                 NQFQKAEAISVLHEVIQQTFNLFSTKDSSVAWDERLLDKLYTELYQQLNDLEACVMQEVWYGGTPLMYED
 IFNalpha5
                 NQFQKAQAISVLHEMIQQTFNLFSTKDSSATWDETLLDKFYTELYQQLNDLEACMMQEVGVEDTPLMNVD
IFNalpha4b
             (69) HQFQKTQAISVLHEMIQQTFNLFSTEDSSAAWEQSLLEKFSTELYQQLNDLEACVIQEYGYEETPLMNVD
IFNalpha21
             (69) NQFQKAQAISVLHEMIQQTFNLFSTKDSSATWEQSLLEKFSTELNQQLNDMEACVIQEVGVEETPLMNVD
 IFNalpha2
             (68) NQFQKAETIPVLHEMIQQIFNLFSTKDSSAAWDETLLDKFYTELYQQLNDLEACVIQGVGVTETPLMKED
IFNalpha16
             (69) NQFQKAQAISAFHEMIQQTFNLFSTKDSSAAWDETILDKFYIELEQQLNDLEACVTQEVGVEEIALMNED
IFNalpha14
             (69) NOFOKAQAISVLHEMMOOTFNLFSTKNSSAAWDETLLEKFYIELFQQMNDLEACVIQEVGVEETPLMNED
IFNalpha13
             (69) NQFQKAPAISVLHELIQQIFNLFTTKDSSAAWDEDLLDKFCTELYQQLNDLEACVMQEERYGETPLMNAD
IFNalpha10
             (69) NOFOKAQAISVLHEMIQOTFNLFSTEDSSAAWEQSLLEKFSTELYQQLNDLEACVIQEVGVEETPLMNED
             (69) SQLQKAHVMSVLHEMLOOIFSLFHTERSSAAWNMTLLDQLHTGLHOOLOHLETCTLOVVGEGESAGAISS
 IFNomeqa1
  IFNgamma
             (58) NWKEESDRKIMOSOIVSFYFKLFKNFKD----DOS-LOKSVETEKEDMN-KKFFNSNKKKRDDFEKTTNY
             (71) NQFQKAQAISVLHEMIQQTFNLFSTKDSSAAWDE LLDKF TELYQQLNDLEACV QEVGVEETPLMN D
 Consensus
                 141
            (140) LRLQVKMYFRRIHDYLE-NQDYSTCAWATVQVEISRCLFFVFSLTEKLSKQGRPLNDMKQELTTEFRSPR
     IFNB2
            (139) SSLHTKRYYGRILHYLK-AKEYSHCAWTTVRVEITRNEYFINRLTGYLRN-----
      IFNB
 IFNalpha8
            (139) SILAVRKYFORITLYLT-EKKYSSCAWEVVRAEIMRSFSLSINLOKRLKSKE----
            (139) FILAVRKYFORITLYLM-EKKYSPCAWEVVRAEIMRSFSFSTNLKKGLRRKD------
 IFNalpha7
            (139) SILAVRKYFQRITLYLT-EKKYSPCAWEVVRAEIMRSFSSSRNLQERLRRKE-----
 IFNalpha6
            (139) SILTVRKYFQRITLYLT-EKKYSPCAWEVVRAEIMRSFSLSANLQERLRRKE-----
 IFNalpha5
IFNalpha4b
            (139) SILAVRKYFORITLYLT-EKKYSPCAWEVVRAEIMRSLSFSTNLQKRLRRKD-----
IFNalpha21
                 SILAVKKYFQRITLYLT-EKKYSPCAWEVVRAEIMRSFSLSKIFQERLRRKE------
 IFNalpha2
            (138) SILAVRKYFORITLYLK-EKKYSPCAWEVVRAEIMRSFSLSTNLQESLRSKE----
IFNalpha16
            (139) SILAVRKYFQRITLYLM-GKKYSPCAWEVVRAEIMRSFSFSTNLQKGLRRKD-----
IFNalpha14
            (139) SILAVKKYFORITLYLM-EKKYSPCAWEVVRAEIMRSFSFSTNLOKRLRRKD-----
            (139) SILAVKKYFRRITLYLT-EKKYSPCAWEVVRAEIMRSLSLSTNLQERLRRKE-----
IFNalpha13
IFNalpha10
            (139) SILAVRKYFORITLYLI-ERKYSPCAWEVVRAEIMRSLSFSTNLOKRIRRKD-----
 IFNomega1
            (139) PALTIRRYFOGIRWYLK-EKKYSDCAWEVVRMEIMKSLFLSTNMOERLRSKORDLGSS-----
  IFNgamma
           (122) SVTDLNVQRKAIHELTQVMAELSPAAKTGKR---KRSQML---FRGRRASQ-----
Consensus
           (141) SILAVRKYFQRITLYL EKKYSPCAWEVVRAEIMRSFS STNLQ RLRRK
```

Figure 4

Protein Level Comparison

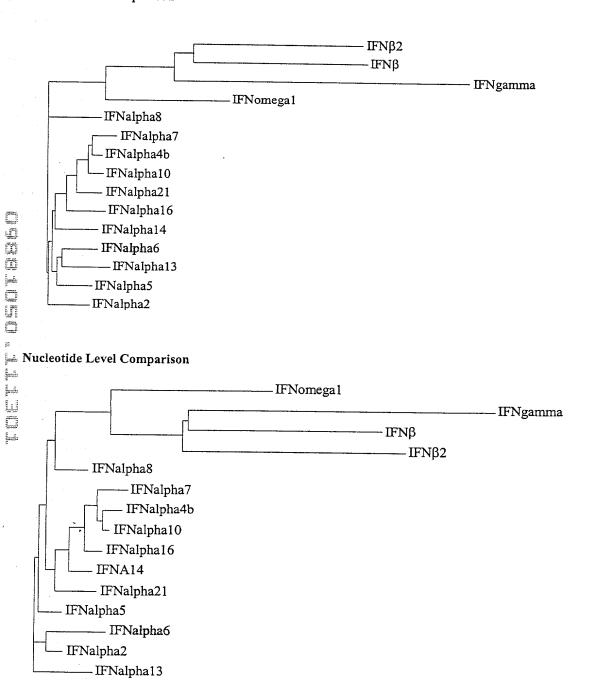


Figure 5

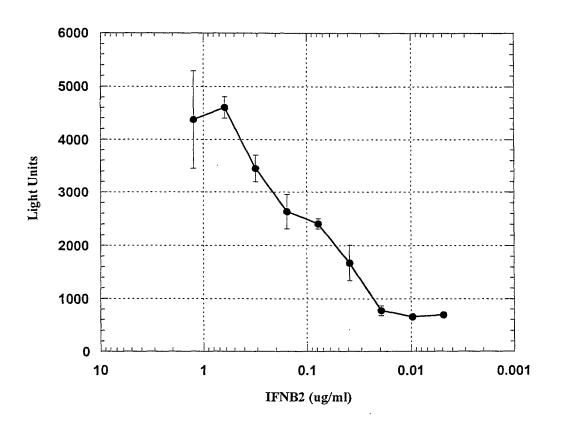


Figure 6

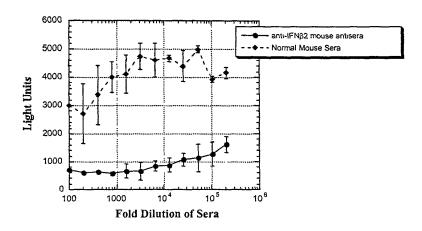
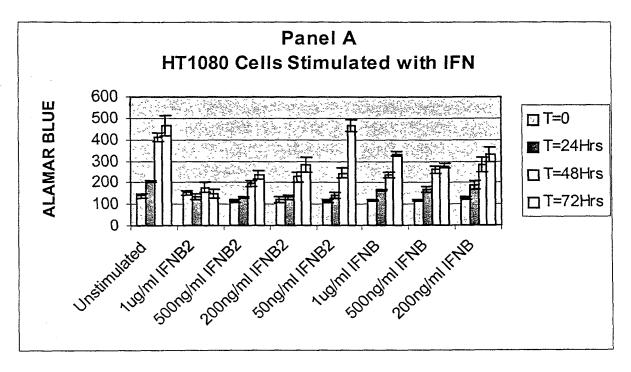


Figure 7



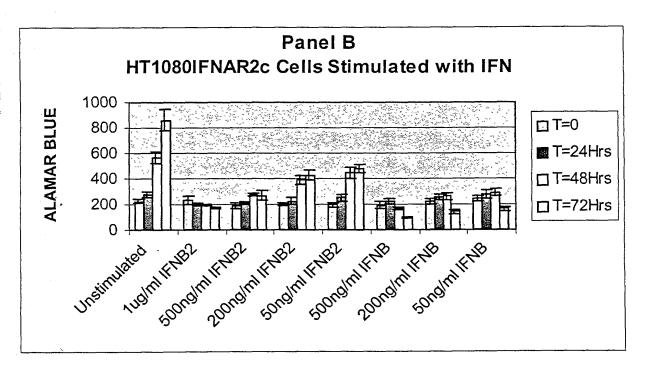
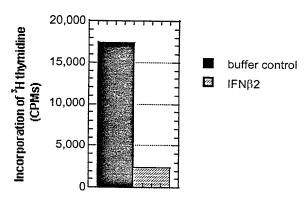


Figure 8



24 hours after addition of ³H thymidine

Figure 9

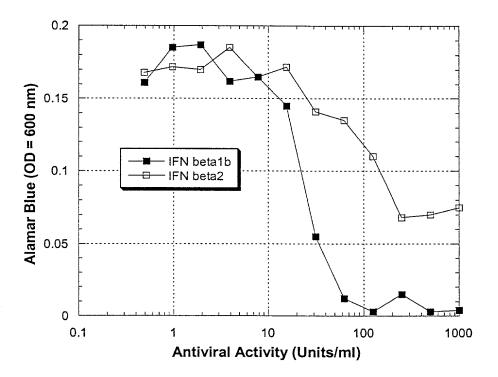


Figure 10

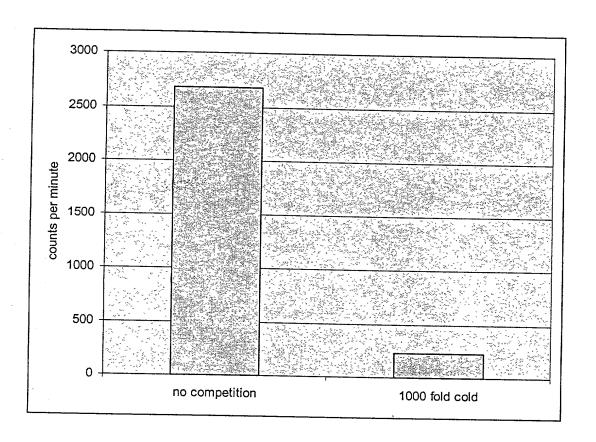


Figure 11

1	tttaggtgac	actatagaat	actcaagctt	qactaaatat	ttagaaagca	cattgtgttc
61	agtgaaactt	tgtatataat	gaatagaata	ataaaagatt	atqttqqatq	actagtctgt
121	aattgcctca	aggaaagcat	acaatgaata	agttattttg	gtacttcctc	aaaatagcca
181	acacaatagg	gaaatggaga	aaatgtactc	tgaacaccat	qaaaaqqqaa	cctgaaaatc
241	taatgtgtaa	acttggagaa	atgacattag	aaaacgaaag	ctacaaaaqa	gaacactctt
301	caaaataatc	tgagatgcat	gaaaggcaaa	cattcactaq	agctggaatt	tccctaaqtc
361	tatgcaggga	taaqtaqcat	atttgacctt	cacc	3 33	J · -

Figure 12

361				atgatt	atcaagcact	tctttggaac
421	tatattaata	ctactaacct	ctaccactat	attatatata		tgattatctt
407	-3-333-3	o og o og g c o o	ccaccactat	Citcicicia	gatttgaaac	tgattatett
481	ccagcaaaga	caagtgaatc	aagaaagttt	aaaactcttg	aataagttgc	aaaccttgtc
541	aattcagcag	tgtctaccac	acaggaaaaa	ctttctqctt	cctcagaagt	ctttgagtcc
601	ttaactgtac	caaaaaggac	acactctggc	cattcttcat	gagatgct	

Figure 13

$\frac{MIIKHFFGTVLVLLASTTIFS}{\text{CLPHRKNFLLPQKSLSP}}$

Figure 14

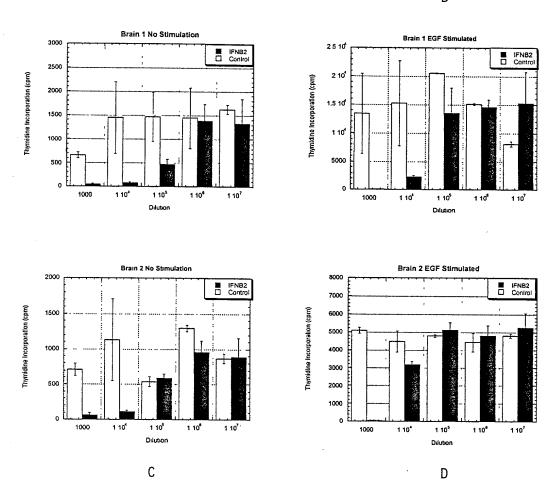


Figure 15